

# Organic Farming as a Tool for Productivity and Poverty Reduction in Asia

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## **Abstract**

*This concise synthesis paper is based on some recent developments and also primarily on an IFAD evaluation of small farmer experiences of organic projects under different conditions in Asia - led by this author. It briefly reviews key issues ranging from the adequacy of fertilizers, labor, and plant protection to important considerations about certification and marketing. It finds significant evidence that organic methods could be favorable for small farmers but that the immediate impact on the farmer differs depending on the organizational support available and whether the farmer transitions to organics from traditional low-input methods or from conventional and more intensive methods of production. Some of the related externalities, including resource conservation and soil fertility, may be even more valuable in the long run. Evidence also indicates that the organic supply chains of processing and trade also earn more money. The paper considers that further growth and meeting the demands of increasingly mainstream distribution channels such as supermarkets will nevertheless be difficult for most producers and will require the both the effective organization of small farmers and a combination of well-targeted public and private support especially in terms of research, extension, and market development.*

Although organic agriculture is certainly growing in popularity, there are conflicting opinions about its potential and the benefits it can offer, in particular whether organic methods can actually improve the livelihoods of smaller farmers. Similarly, questions remain about what impact organic methods have on labor, soil quality, local economies, and risk. Two areas of debate are most prominent: the local risk-benefit ratio of organic adoption and the marketability of smallholder organic products. This brief note will attempt to address both issues based on lessons learned and also set the context for understanding the basic characteristics of organic producers in the region

### **Characteristics of Organic Production**

It is important to understand the rationale that farmers follow when considering adoption of organic methods. Greater income is the reason most farmers give for converting to organic agriculture, followed by health (personal and family), ideological, and environmental reasons. First movers tend to be either farmers using rustic or traditional methods of cultivation or the most sophisticated farmers with access to certification and marketing opportunities. Farmers that convert only because of the promise of higher prices are more likely to only participate in a perfunctory manner, not apply or adhere to the standards, and fail to receive the full benefits. Those who have a holistic understanding of organics are likely to be motivated by local benefits such as improved soils, fewer toxic chemicals, and self-reliance with inputs; these are likely to better withstand setbacks and difficult periods especially during the conversion stages and reduced premiums.

The IFAD evaluation found that organic adoption initially tends to increase labor costs and concurs with other studies (Diop 2002; Damiani 2003; Pretty et al. 2005; UNCTAD 2006) that note the switch to organics from a traditional or rustic form of cultivation has positive consequences in terms of yields and profitability, thereby providing better incomes. When switching from intensive forms of agriculture to organics, labor costs are again higher, yet input costs are typically lower especially after conversion phases, yields may be reduced at least initially, and overall income from sales at a premium price is higher. First and second year losses in yields were often considerable as farmers and their eco-system adapted. By the third year, yields had typically stabilized. Although many stabilized at a

The International Fund for Agricultural Development commissioned an evaluation in 2004-05 to determine the role of organics in development programs and under what circumstances they should be integrated into future strategies to enable a better understanding of organic agriculture in Asia and to clarify how organics can serve or hinder small farmers and rural communities.

Information was drawn from case studies conducted by a team of nine scientists in China and India, as well as reviews of five other Asian countries and more than a hundred related studies and documents.

An independent International Scientific Committee of esteemed experts was appointed to ensure that the evaluation adopted scientifically valid methods with a holistic perspective that considers economic, social and ecological sub-systems. Committee members: Alain de Janvry, Jikun Huang, Gunnar Rundgren, M.S. Swaminathan, and Raffaele Zanolli.

yield level lower than before, some of the more sophisticated farmers were able to actually improve yields with organic methods.

The need for improved production technology is especially clear in the case of converting farmers. In most cases, it is more appropriate to measure total farm yields rather than measuring single crops since organic systems insist on some diversification away from dependence on a single crop. Organics, mostly because of current price premiums, are generally more profitable than conventional agriculture and more than make up for yields or productivity losses that may occur during transition.

According to IFAD inquiries, the most difficult hurdle for small farmers to surmount is the lack of adequate technical advice (extension) on production technology. The second most important requirement is market information or promotion. Its importance reflects the not only the need for market orientation but also the limited success of farmers and their supporting organizations when undertaking marketing and sales. Financing for transition or expansion was ranked next in importance followed by lower cost of certification and then assistance with quality management and internal control systems.

#### **Farmer ranking of intervention priorities to facilitate conversion**

Ranking of importance of interventions (1 is most desired and 5 is least desired)	
Technical advice (extension) on production technology	1
Market Information or Promotion	2
Financing for start-up, transition period, or expansion	3
Lower cost of certification	4
Quality management and internal control systems	5

#### **Marketability**

With nearly 31 million hectares certified organic (Willer and Yussefi 2006) and a fast growing market segment estimated to have reached 35 billion dollars in 2006 (mostly from mainstream expansion), what role do small producers have?

It is clear that many **producers are poorly prepared** for an escalation in this farming method and rural communities lack basic support systems and organizational needs. This is especially true for those participating in competitive higher value channels such as exports and mainstream distribution channels such as those increasingly dominated by supermarket chains.

The implications are especially important for Asia as the total value of the global retail food market (estimated at more than US\$3.5 trillion) shifts increasingly toward Asia with China expected to increase its share by 2020 from the current 8% to 15% and the US to decrease from

22% (in 2003) to 19%.<sup>1</sup> If **Asian nations are to fill much of this local need**, they will face greater pressures for not only the quantity of food available but also for its safety and quality, systems for which are inadequate for the task in a number of countries in the region.

Today's shifting government/regulatory, business, and consumer concerns are inducing profound changes in the nature of global trade. These increase the demand for both quality and safety standards that become barriers to entry and have profound implications for small and medium producers. Given that organics can meet the safety and traceability requirements of most emerging **trade standards**, they can actually help producers to overcome these barriers and improve their competitive position.

**Organic exports** from the Asia region have expanded quickly. China grew from less than US \$1 million in the mid-1990s to an estimated US\$200 million for 2005. In India organic development has, until recently, focused primarily on farmer welfare and on localized benefits rather than market development. However, India's organic exports have doubled between 2003 and 2006 to US\$ 28.8 million. Statistics for organics are notoriously inadequate and may not reflect for e.g. that 5 of the 10 top world producers of organic rice are Asian nations.

Asian countries are also **importing organics**. Most is distributed through specialized retail channels and the region totals about \$750 million in 2005. Japan is the leader but others are also significant. Korea's imports grew strongly more than doubling from about \$14 million to more than \$35 million in 2005 alone (Korean Food and Drug Administration) and it also had strong internal organic production growth averaging 46% annual increase(199-2005) and even greater growth in eco-friendly agriculture (National Agricultural Products Quality Management Service 2006).

Besides international markets, the **domestic markets** in a number of countries are emerging and in many cases can accept alternative certification methods that reduce farmer costs and compliance requirements. In China a parallel market to organics, for certified Green Foods, is one of the most successful eco-labeling programs in the world. With annual sales reaching US\$ 12 billion in 2004 this market is as large as the world's leading market for organics: the USA. Its participating producers though are mostly larger agribusiness farms. Even Korea has a notable retail market for environmentally-friendly agricultural products that is estimated at \$800 million (2005). Japan's domestic organic market is the strongest in the region with estimated retail sales of several hundred million dollars followed by China (estimated at 150 million in 2004 by OFDC). Korea's domestic retail market for processed organic foods is estimated at \$160 million for 2005 (Industrial Resources cited in GAIN Report Number: KS6028 in March 2006). In India, a number of organic products are sold informally under local credence systems and not tracked via certification though certified sales were estimated at US\$ 22.7 million (ICCOA survey 2005). Emerging markets in Malaysia, Singapore, Thailand, Philippines and other areas are showing signs of fast growth though most are still small and often aimed mostly toward elite shoppers. These countries are estimated to have organic markets reaching into the tens of millions of dollars each.

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<sup>1</sup> IGD estimate <<http://www.igd.com/CIR.asp?menuid=50&cirid=1505>>

Domestic market channels for organic products are still limited for most producers and while that leaves many organic farmers oriented toward export sales, a considerable number are focused locally. Many of these value what they perceive as the **intrinsic local benefits of organic** production. For them, particularly in India and China, lower production costs, improved soils, fewer toxic chemicals, self-reliance in inputs, and harmony with nature were cited as the important reasons for being organic.

The market for quality and safe foods are already large and given recent responses to food scares and the increasing concentration of food distribution channels, they are likely to continue growing strongly. **Safety and quality increasingly becoming prerequisites for market entry** but, as the Green Food experience in China has shown, price premiums can be limited. Although organic premiums are still very high in some markets, and expected to stay high in the short to medium term, price expectations are less promising for the long term as more and larger producers enter.

### **Risk and benefit: impacts of organic agriculture**

The immediate **impact of organic conversion** differs between farmers, depending on the organizational support available and whether the farmer's transition is from traditional low-input methods or from conventional and more intensive methods of production. The switch from a traditional or rustic form of cultivation tends to have positive consequences in terms of yields or output. However, when switching from intensive forms of agriculture, first-year losses in yields were notable. By the third year yields had typically stabilized but often somewhat below conventional yields. Both types of farmers improved their overall incomes after converting to organic methods, but for some this was only due to higher premiums paid for organic produce. The potential benefits of organic farming are clearly not always immediate and require several years of commitment.

The IFAD evaluation also found that, in most cases, there is generally adequate availability of organic **inputs**. Though some research has suggested that organic systems may deplete soils under intensive agriculture production systems<sup>2</sup>, none of the organic projects evaluated in China and India suffered from negative plant health or noted soil fertility issues<sup>3</sup>. This is particularly true where organic cropping is integrated with livestock components, especially for less fertile areas. In addition to providing fertilization livestock can provide power and fuel, and can be a source of food security and income diversification.

Organic conversion is often considered for areas where agro-ecological conditions are favorable for farming and environments are unspoiled. However, some of the more interesting examples of success have occurred under the more **difficult conditions of semi-arid or even degraded**

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<sup>2</sup> Pender and Mertz (2005) offer a balanced and well-researched discussion of the issue for Africa, noting that organic approaches are not necessarily always successful although they do not address the potential reasons i.e. poor nutrient management practices, for such failures.

<sup>3</sup> To be fair, soil sample measurements were not conducted as part of the research, and this conclusion is based primarily on reports of farmers and extension agents as well as surface observations of factors such as soil tilth and productivity.

**landscapes.** In some cases, probably because organic agriculture can build soil quality and is generally less water intensive than conventional agriculture, it can be particularly productive where conventional high-input farming methods would be impractical or too costly.

Organic agriculture tends to **require somewhat more labor** than conventional systems and in areas where there is a labor shortage this may be a limiting factor. Conversely, where workers are abundant and migration occurs, it can help contribute to rural employment and possibly to community stability.

Organic farming is primarily **knowledge intensive** whereas conventional farming is more chemical and capital intensive. This requires an active system to support farmer learning in order to address both the production and the post-harvest requirements of organics. There are several complementary approaches to achieve this. Today, most of the market-oriented organic farming is an arrangement, often contractual, between trading companies and farmers in which the companies are clearly dominant. With the notable exception of Japan, this model is pervasive particularly in China, in Thailand, and near urban centers in India.

A company-based approach with **contract farming** can achieve a number of the requirements by providing farmers with the necessary knowledge and inputs and also helping fulfill the chain linkages required in order to successfully bring a product to market. However, companies may not consistently provide these services in a manner that is optimal for the farmer. Companies obviously have a profit incentive and that can take precedence over a farmer's well-being and long-term success. This model when it prevails in poorer regions fosters unfortunate asymmetries wherein most farmers labor with few production scale efficiencies, weak farmer organization, and limited market orientation, consequently they receive only a part of the benefits of organics.

There is clearly a **role for government and the public sector** to help provide missing services and thereby ensure a more equitable development. These include: research to provide practical cultivation technologies; extension services to ensure dissemination of information; balanced and enforceable contract law; and providing opportunities for the strengthening of collective associations such as co-operatives and trade associations could help alleviate some shortcomings.

Though it remains a small portion of the total arable land, there has been a strong growth in the **land area now under certified production** in the region. Already China has grown in just a few years to third place globally in total area with 2.3 million hectares certified, much as grazing land. India similarly has certified more than 2 million hectares of land though much of it is for wild-harvesting and grazing. Thailand and Bangladesh have nearly 200,000 ha. each. Other nations in the region have much smaller acreage but a number—including Korea, Pakistan, Indonesia, East Timor, and the Philippines—measure in the tens of thousands of hectares

Organic farming for markets has several requirements besides the prohibition of synthetic agrochemicals and these include meeting a number of production and environmental standards and keeping adequate records in order to be certified. For farmers, developing and managing their own **Internal Control Systems** is a way to both minimize compliance costs and improve their associations' responsibility and management skills and so become better prepared to

manage the plethora of other standards that are increasingly mandated for trade. Certification is costly for small farmers and often not in the name or control of the farmers that are certified. When traders or contracting firms own the certificate this is likely to diminish farmer interest and commitment to organics, not to mention their market options.

The quality of **certification** systems in the region has improved in recent years and is still very uneven. In many cases, there is a distinct lack of adequate information about what organic certification is among consumers and farmers alike. This likely hinders adoption and market development. Initially most certification was done by foreign certifiers but increasingly, and often through joint ventures or local offices, these services are being handled locally. In some cases alternative credence systems can be adequate for small scale exchange where farmers and consumers, or a credible intermediary, are familiar with each other. In addition, these trust-based systems can reduce the costs and entry barriers to organic market participation.

## **Conclusions**

As the IFAD evaluation noted, “In the context of development, the role of **organic agriculture cannot be fairly assessed in the narrow economic terms** of market premiums. Its value does not rest merely in the fact that it can provide higher incomes, but in that it can potentially **contribute to long-term resilience and stability** particularly in terms of resource conservation, crop diversification, food security, and a number of positive environmental externalities.”

There is no significant credible evidence that organic methods would, overall, be more deleterious than conventional methods for small farmers. In fact, most of the evidence and case studies note a number of benefits from which it is reasonable to conclude that the promotion (though not necessarily certification) of **organic agriculture among small farmers can reduce some risks and contribute to poverty alleviation** and is therefore well warranted.

Some of the **externalities related to organics, including resource conservation and soil fertility, may be even more valuable than market premiums** in the long run and ought to be a primary focus of organic development strategies. The IFAD evaluation concurs with many studies (Setboonsamg 2006; UNCTAD 2006; Kristiansen et al. 2006) noting that for small and poor farmers, organics can be an effective risk management tool that reduces their input costs, diversifies their production, and improves local food security. Similarly, on a larger scale, it can provide improved incomes, better resource management, and more labor opportunities for rural communities. At the level of agricultural competitiveness, organics meet the increasing demands for improved food safety methods and traceability that are becoming a requirement in high-value agricultural trade. At the governmental level, organics reduce the possibility of environmental contamination, reduce the use of chemical inputs (often imported), and minimize the considerable public health costs of pesticide poisoning (WHO, UNEP, FAO 2004).

These findings and others are summarized in the table below. Organic agriculture does not necessarily cause or accomplish these features, but it can. Nor does it have an exclusive relation to them; other forms of agriculture i.e. LEISA, can also achieve many of these features. Organic approaches do serve to encompass many of these aspects sustainability in one package.

## Elements of sustainability potentially embodied in organic farming systems

<b>Soil &amp; Environmental Health</b>	Systemic approach addresses biodiversity, conservation, and degradation Long-term commitment to the fertility of the soil reduced erosion
<b>Resource Management</b>	Reduction of external energy consumption especially in the form of purchased inputs and the reduction of water use
<b>Nutritional Security</b>	Organic systems because of diversified production and greater resistance to weather variables (drought, torrents, etc.) have the potential to improve local food and nutritional security Increasing cases of laboratory test evidence point to higher nutritional content in some organic foods
<b>Local Orientation</b>	Rather than either capital or resource-intensive, requires knowledge of local systems and cycles Couples traditional localized knowledge with modern methods such as bio-controls and efficient nutrient management to reinforce both
<b>Community Impact</b>	Organics often integrate traditional knowledge and require landscape-level joint problem solving that can improve community relations

Despite positive prospects, the **adoption of organics is often not simple and requires careful consideration**. For smaller farmers to achieve sustainable growth and development with organics, there are five areas to be addressed that build on the recommendations of IFAD's evaluation:

### 1. Organization of farmers into functional units

Meeting the demands for certification, quality, and consistency of increasingly mainstream distribution channels like supermarkets will be difficult for most producers and will require the organization of small farmers and a combination of public and private support. Local farmer associations can facilitate the exchange of knowledge, support farmers through the early conversion processes, improve production and post-harvest controls, achieve scale economies, improve farmers' bargaining position, and play an important role in organic product marketing. For small farmers, external private firms or NGOs can fill some of the gaps but may not be an ideal substitute for farmer associations.

### 2. Investment in the technical production aspects of organic conversion.

Farmers, particularly small ones, often need basic technical production and post-harvest knowledge to succeed. For many small farmers practicing rustic or traditional methods of agriculture, transition to organic results an increase in both yields and overall incomes. The implications for converting conventional farmers that practice intensive cultivation methods would necessarily be different and require careful analysis of the probable outcomes. Transitional periods can mean uncertainties and a decline in yields for those farmers that employ intensive agricultural methods and are dependent on external inputs because the benefits of organics are not immediate. In the current demand environment, overall farm incomes — though not always yields — would soon recover. In the long run, organic methods may be more cost-



effective and even more profitable, but only if properly applied. The transition process and the time it takes are a barrier especially to many conventional farmers and they require various types of support.

### **3. Market knowledge and access.**

Helping farmers to first assess their market orientation and then access targeted organic markets requires business and marketing skills that many NGOs and farmer associations often lack. It is not necessary to turn a farmer into a trader but an apex body or a network of organizations can be fortified with outside support and training in order to take advantage of scale economies, improve bargaining, and significantly reduce transaction costs. A private sector partner can also fulfill this role provided that the arrangement secures a measure of equity for participating farmers. Any strategy to promote organic agriculture among the poor ought to also consider crop choices. While the production of market-oriented varieties is important so is local varietal adaptability.

### **4. Managing costs and access to verification (certification).**

Organic marketing is built on trust so checks and balances are necessary to ensure credibility. These can be simply based on relationships and reputation, and therefore cost-free, at the local level. The process of certification can be difficult and costly but in most of the cases public bodies, NGOs, and partnering firms can facilitate the process and even offset the initial costs for farmers. Since landholdings can be very small, farmers must organize in order to facilitate Internal Control Systems and apply for group certification. This can not only reduce their individual costs but also enable them, by virtue of owning their certification rather than having a firm or trader own it, the independence to negotiate their own terms of sale and seek appropriate buyers.

### **5. Institutions & public policy**

Perhaps the single most important factor for successful organic adoption is the availability of a reliable local institutional support system that can initially help provide the many components that farmers find difficult to access. These include production know-how and post-harvest technology, initial financing for certification, input production, and marketing. Capacity-building at the farmer level (local farmers associations, local training and advisory services) should be a central aspect of any strategy aimed at using organic agriculture as a tool for poverty alleviation in rural areas.

For organic farming it is intrinsically difficult to establish a one-size-fits-all approach since conditions will vary in different zones. Organic projects require that time be built into the process for farmers to test and learn new technology and methods. Knowledgeable extension service is critical. Local know-how, especially from experienced farmers and knowledgeable elders, can smooth the transition and reduce risks. It is also important to provide farmers good access to sources of knowledge about the application of organic methods to their crops and agro-ecological conditions.

Public investment in organics is very limited and in order to advance, it will be important to overcome the systemic biases in public expenditures that favor conventional agricultural systems. Most nations in the region lack significant research in organic technology and organic

extension services to reach farmers. Other distortions include subsidies to the fertilizer industry that serve as disincentives that may limit the adoption of organics and make them less competitive.

Holistic methods don't often provide a quick fix and require a longer-term commitment. Therefore, government and local institutions such as NGOs need to be committed to supporting a multi-year process. Such a commitment might require: acquisition of organic production technology and training, especially for extension service agents; preparation for certification and initially covering its costs; and very limited subsidies to cover possible reduced income during the transition period.

In addition to disseminating organic information more broadly and directly to farmers, domestic market development can be an important factor in order to stimulate farmers to improve their practices and adopt organic methods. Improved consumer education efforts in regard to standards and what they represent could stimulate this considerably since consumer confidence is typically underdeveloped and, in some cases, consumers already doubt label claims.

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## Resources

[www.ifad.org/evaluation/public\\_html/eksyst/doc/thematic/organic/asia.pdf](http://www.ifad.org/evaluation/public_html/eksyst/doc/thematic/organic/asia.pdf)

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